

**REMARKS**

Claims 23-57 are pending in this Amendment. Claims 1-22 have previously been canceled. By this Amendment, claims 23, 26, 27, 30-32, 35, 36, 39-43, 45, 48, 49, 52-54, and 56 have been amended. The amendments introduce no new matter. Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

**I. 35 U.S.C. §112, Second Paragraph, Rejections**

The Office Action rejects claims 23, 32 and 45, asserting that the phraseology "information of a device manufacturing process as for a device manufacturing process" is grammatically awkward and/or appears to be redundant. These claims have been amended to obviate this rejection.

The Office Action asserts that there is no clear and proper functional antecedent for "selecting away from manufacturing process which can manufacture a semiconductor wafer having wafer characteristics corresponding to the information of the device manufacturing process" (or similar language). Applicants believe that this feature is clear and proper when read in view of the specification. A wafer maker manufactures a semiconductor wafer to be used as a substrate. A device maker then forms various devices such as a memory on this wafer. Specification, paragraph 2. The device maker may specify explicit general specifications of a wafer to the wafer maker, for example, quantity, time of delivery, properties of an ingot and a wafer (a diameter of a wafer, a conductivity type, resistivity, oxygen concentration, flatness), or the like. Specification, paragraph 5. There are various device making processes that a device maker can use to manufacture a device from the wafer. Examples might include lithography processes, heat treatment processes, CMP processes, or etching processes. Further, there are various apparatuses that a device maker can use in manufacturing devices from the wafer, according to the various device manufacturing

processes. Examples might include a chuck, an aligner, a stepper, or a heat treatment furnace. Such information on the device manufacturing process or for an apparatus used by the device maker in the device manufacturing process has not conventionally been part of the general specifications of a wafer order from a device maker to a wafer maker. However, it is possible to use such information to inform the selection of a wafer manufacturing process according to considerations of quantity, delivery date, throughput, efficiency, quality of wafers, suitability for a particular device manufacturing process, suitability for particular device manufacturing apparatus, or yield.

The Office Action asserts that in claim 28, the first occurrence of an abbreviation in the claims must be accompanied by its definition; in this case, "CMP" was not defined in the claim language. The claim has been amended to define the first use of the term Chemical Mechanical Polishing (CMP).

The Office Action asserts that in claims 30 and 31, there is no clear and proper functional antecedence for "printing a laser mark corresponding to the information of the device manufacturing process." Claims 30 and 31 have been amended to obviate this rejection. Withdrawal of this rejection is respectfully requested.

The Office Action asserts that in claims 41, 43, 54 and 56, there is no clear and proper antecedent basis for "the ABC parameter." Claims 41, 43, 54 and 56 have been amended to include proper basis for the ABC parameter. Withdrawal of this rejection is respectfully requested.

The Office Action asserts that in claims 43 and 56, there is no clear and proper antecedent basis for "the configuration over the back surface of the semiconductor wafer." It is Applicants' position that front and back surfaces, and configuration thereof, are inherent to semiconductor wafers. Withdrawal of this rejection is respectfully requested.

## II. 35 U.S.C. §§102(a) and 102(e) Rejections

The Office Action rejects claims 23-25, 28, 30, 32-34, 37, 39, 45-47, 50 and 52 under 35 U.S.C. §§102(a) and 102(e) as being clearly anticipated by Mori et al. (U.S. Patent 6,725,122) (hereinafter "Mori"). Applicants respectfully traverse this rejection.

Specifically, applicants assert that Mori does not disclose or suggest a method for manufacturing a semiconductor wafer including at least obtaining information of a device manufacturing process, analyzing the information of the device manufacturing process and selecting a corresponding wafer manufacturing process which can manufacture a semiconductor wafer having wafer characteristics determined by the analysis of the information of the device manufacturing process, and manufacturing a semiconductor wafer according to the selected wafer manufacturing process and said device manufacturing process information, as recited in independent claim 23, and similarly recited in independent claims 32 and 45.

Specifically, Mori discloses a method of selecting a photomask manufacturer that includes the steps of storing bidding data sent from a photomask manufacturer, correcting a responded delivery date included in the received bidding data to a corrected delivery date based on a delivery date achieving ratio in a last month, storing priorities relating to a delivery date, technology, order reception and price, reading the corrected delivery date for each of the manufacturers making a bid for a product number to be ordered when the product number is input, calculating total evaluation for each photomask manufacturer based on the plurality of priorities, and selecting the photomask manufacturer satisfying the corrected delivery date and providing the highest total of total evaluation, as the receiver of the order. Mori teaches selecting a manufacturer based on the specifications of the order. Mori teaches a circuit that receives technology data representing a technology of the manufacturer relating to production of the photomask, a circuit that calculates a priority relating to the technology for each of the

manufacturers based on the technology data, and a circuit that selects the manufacturer of the photomask from the plurality of manufacturers selected by the select circuit based on the priorities relating to the delivery date and the technology.

However, Mori fails to teach or suggest a process by which a wafer maker gathers additional information on the device maker's manufacturing process and apparatus, which information is not part of the device maker's order specification. Moreover, Mori also fails to teach or suggest the additional step of the wafer maker analyzing that additional information as to the device maker's manufacturing process and apparatus, and using the results of that analysis in combination with the device maker's order specification to select a wafer making process from among plural wafer manufacturing processes and characteristics. Such analysis allows a wafer maker to select an optimal wafer manufacturing process for each device maker, device manufacturing process, and device manufacturing apparatus. Whereas, Mori teaches a method of selecting a photomask manufacturer, the present invention is directed to selecting an ideal wafer manufacturing process.

Accordingly, applicants respectfully assert that Mori fail to teach a method for manufacturing a semiconductor wafer including at least obtaining information of a device manufacturing process, analyzing the information of the device manufacturing process and selecting a corresponding wafer manufacturing process which can manufacture a semiconductor wafer having wafer characteristics determined by the analysis of the information of the device manufacturing process, and manufacturing a semiconductor wafer according to the selected wafer manufacturing process and said device manufacturing process information, as recited in independent claim 23, and similarly recited in independent claims 32 and 45.

The Office Action rejects claims 26, 27, 29, 31, 35, 35, 38, 40-44, 48, 49, 51 and 53-57 under 35 U.S.C. §103(a) as being unpatentable over Mori, as applied to claims 23, 32

and 45 above, further in view of Kurosawa (U.S. Patent 6,704,093) (hereinafter "Kurosawa").

This rejection is respectfully traversed.

The Office Action asserts that Mori et al. teach Applicants' invention substantially as instantly claimed, except for the presence of the ABC parameters. As discussed above, Applicants contend that Mori does not disclose all the steps of the present invention, and therefore does not anticipate independent claims 23, 32 or 45. Kurosawa does not overcome this deficiency. Therefore, Applicants respectfully submit that claims 26, 27, 29, 31, 35, 36, 38, 40-44, 48, 49, 51 and 53-57 are patentable for their dependence on independent claims 23, 32 and 45, as well as for the additional features they recite. Withdrawal of this rejection is respectfully requested.

### **III. Conclusion**

Applicants submit that the claims, including independent claims 23, 32 and 45, as well as all claims dependent on independent claims 23, 32 and 45, define patentable subject matter not taught or suggested in the prior art. Accordingly, Applicants request that the rejections under 35 U.S.C. §§102(a) and 102(e) and 35 U.S.C. §103(a) be withdrawn.

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number set forth below.

Respectfully submitted,



William P. Berridge  
Registration No. 30,024

Donald A. DiPaula  
Registration No. 58,115

WPB:DAD/brp

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**OLIFF & BERRIDGE, PLC**  
**P.O. Box 19928**  
**Alexandria, Virginia 22320**  
**Telephone: (703) 836-6400**

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